

# Work Order ID 90683

\*90683\*

Page 1

September-24-12 11:18:14 AM

Item ID: D2600-5-080 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Extrusion 'I Beam' thin  
 Start Date: 9/24/12 Start Qty: 80.00 \*80\* Cust Item ID:  
 Required Date: 10/08/12 Req'd Qty: 80.00 \*80\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D2600	E

100	PURCHASING	0.00							
*100*									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 17996								
	a) Extrude as per Dwg D2600 (80" long)								
	b) Material: 6061-T6								
	c) Material certification is required.								

CZ 12/09/26 (162)

110	Receive & Inspect for Damage & Mat'l Certs	0.00							
*110*									
Packaging	Memo	0.00							
Packaging	Ensure certification is attached								

12/10/19 (162)

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Page 2

September-24-12 11:18:14 AM

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 Start Date: 9/24/12 Start Qty: 80.00 \*80\* Cust Item ID:  
 Required Date: 10/08/12 Req'd Qty: 80.00 \*80\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC6- Inspect dimensions to drawing  Memo 2-Check Pull test per Dwg D2600 for compliance page attached. 3-Check hardness with Webster tester  *Pull 20 pcs For Random QC inspection *	0.00  0.00				161	X		
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: <u>LC</u>  Memo	0.00  0.00				168	33	12/10/23	
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00				12/10/29			

12-10-24

NCR: Yes ☒ No ☐

# WORK ORDER NON-CONFORMANCE / UPDATE

DQA ☒ Date: 12/11/02

QA Closed: ☒ Date: 12/12/05

Work Order: <u>90683</u> Part No. <u>D2600-5-080</u> NCR No. <u>12-1982</u>				<b>DISPOSITION</b> Rework <input type="checkbox"/> Scrap <input checked="" type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input checked="" type="checkbox"/> <u>TRANSPORT</u> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/> Equip/Tooling <input type="checkbox"/> Operator <input type="checkbox"/> Material <input type="checkbox"/> Setup <input type="checkbox"/> Other <input checked="" type="checkbox"/> Process <input type="checkbox"/> Supplier <input type="checkbox"/> Training <input type="checkbox"/> Unapproved <input type="checkbox"/>	12/10/06	130	(X)	Found when identifi + stock heat qty x1 has damage on end of web.	DAS 1E 9-2-01 GS2042 12/10/06	Scrap + Destroy. qty x1 \$ 24.59	12/10/06	12/10/06	GS2042 12/10/06		
FAULT CATEGORY											
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input checked="" type="checkbox"/> Other <u>Handling by supplier/transport</u>		

# Picklist Print

September-24-12 11:18:13 AM

Page 1

Work Order ID: 90683

Parent Item: D2600-5-080

Parent Item Name: Extrusion 'I Beam' thin

Start Date: 9/24/12

Required Date: 10/08/12

Start Qty: 80.00

Required Qty: 80.00

Comments: IPP F02.09.10Added DSK 066KJ/RF

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-5-080P Extrusion 'I Beam' thin		Purchased	No			110	Each	0.0000	1	<del>80</del> 162		12/4/12	

# SPECIFICATION CONTROL DRAWING

## D2600-X-XXX EXTRUSION

### NOTES:

1) MATERIAL: 6061-T6 ALUMINUM PER QQ-A-200/6 OR AMS-QQ-A-200/8 OR ASTM B221

MINIMUM TENSILE YIELD STRENGTH = 35 KSI  
MINIMUM ULTIMATE TENSILE STRENGTH = 40 KSI  
MINIMUM ELONGATION = 8%

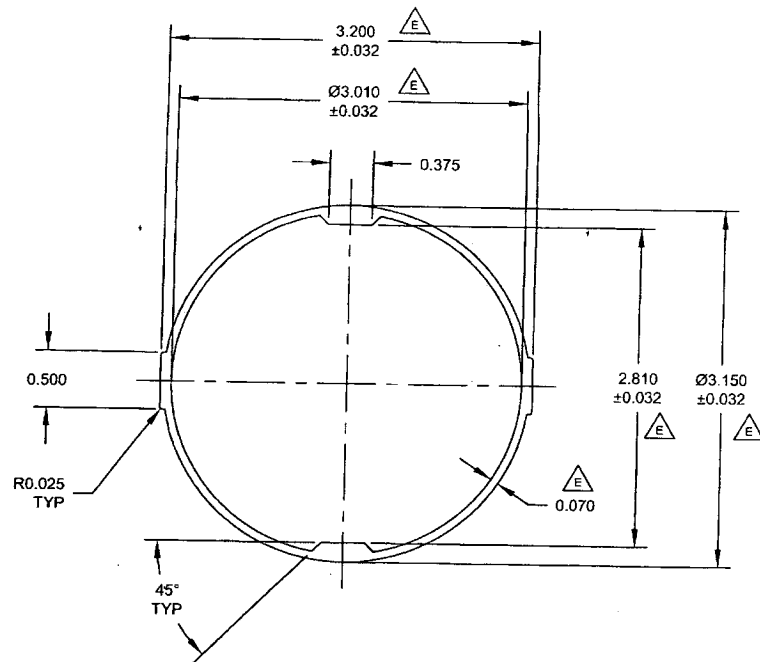
A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES

- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N & B/N PER DART QSI 044 6.1 (FINE POINT PERMANENT INK MARKER)
- 7) WEIGHT: D2600-1 = 0.078 lb/in, D2600-3 = 0.130 lb/in, D2600-5 = 0.045 lb/in, D2600-7 = 0.091 lb/in
- 8) NO TOOLING MARKS
- 9) FOR D2600-1, PART NUMBER IS D2600-1-XXX WHERE XXX IS CUT LENGTH (EX. D2600-1-160 IS 160" LONG).  
D2600-1 EXTRUSION MANUFACTURED FROM:
  - CARADON INDALEX DIE # MH-18870
  - SIGNATURE ALUMINUM (BON-L) DIE # 897121
- 10) FOR D2600-3, PART NUMBER IS D2600-3-XXX WHERE XXX IS CUT LENGTH (EX. D2600-3-120 IS 120" LONG).  
D2600-3 EXTRUSION MANUFACTURED FROM:
  - CARADON INDALEX DIE # MH-18859
  - SIGNATURE ALUMINUM (BON-L) DIE # 897122
- 11) FOR D2600-5, PART NUMBER IS D2600-5-XXX WHERE XXX IS CUT LENGTH (EX. D2600-5-108 IS 108" LONG).  
D2600-5 EXTRUSION MANUFACTURED FROM:
  - CARADON INDALEX DIE # MS-18871
- 12) FOR D2600-7, PART NUMBER IS D2600-7-XXX WHERE XXX IS CUT LENGTH (EX. D2600-7-125 IS 125" LONG).  
D2600-7 EXTRUSION MANUFACTURED FROM:
  - CARADON INDALEX DIE # MS-18872

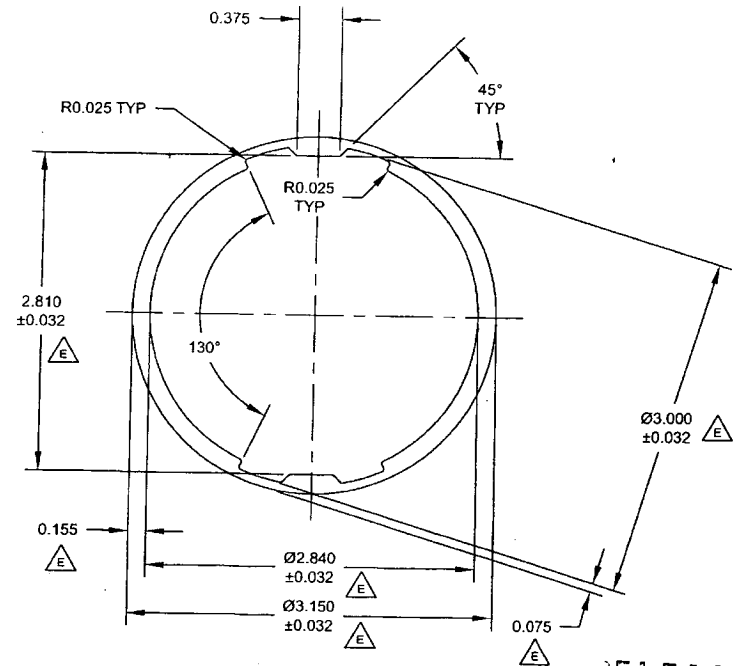
RELEASED  
2012-01-11

C212/09/24  
W/O: 90683

REV.	DESCRIPTION	BY	DATE
E	REFORMAT DWG; ALL DIMS & TOL. UPDATE TO MATCH MFG DIE DWGS; ADD ASTM B221 SPEC (D8-1)	CP	11.10.18
D	INCREASE MIN. UTS TO 40 KSI	DS	98.08.20
C	ADD D2600-3, UPDATE D2600-1 WIDTH, ADD DIE NO.	DS	98.04.16
B	CHANGE MATERIAL SPEC.	DS	97.09.09
A	NEW ISSUE	DS	97.01.21
<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA			
DESIGN	DRAWING NO. D2600 TITLE EXTRUSION SCALE NTS SHEET 1 OF 3		
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	11.10.18		
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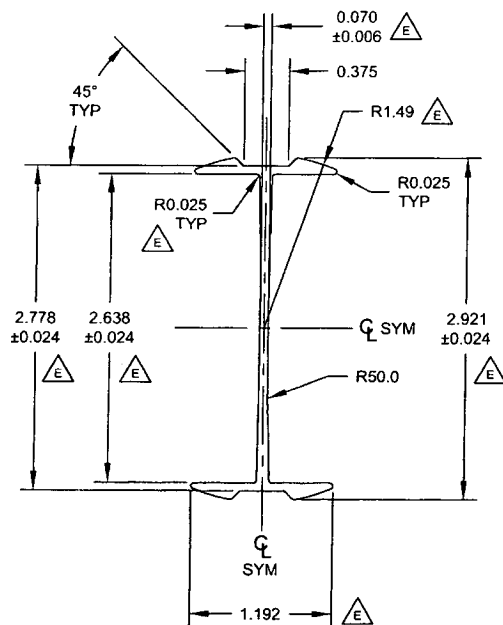
D2600-1 EXTRUSION



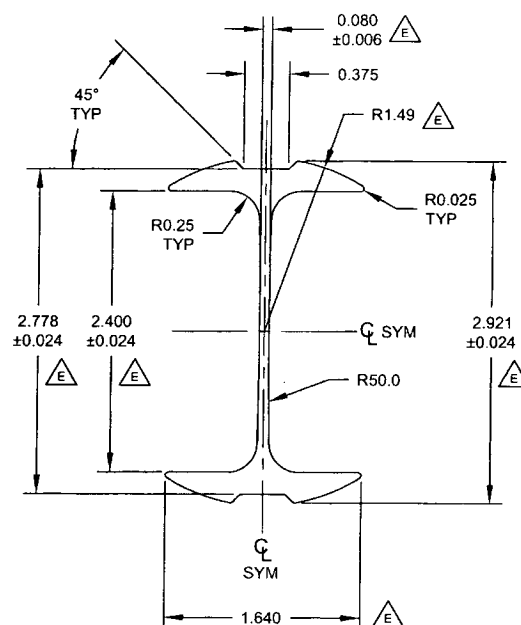
D2600-3 EXTRUSION

RELEASED  
2012-01-10

DESIGN	4	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	DP		
CHECKED	ASS	DRAWING NO.	REV. E
MFG. APPR.	E	D2600	SHEET 2 OF 3
APPROVED	W	TITLE	SCALE
DE APPR.	W	EXTRUSION	NTS
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**D2600-5 EXTRUSION**



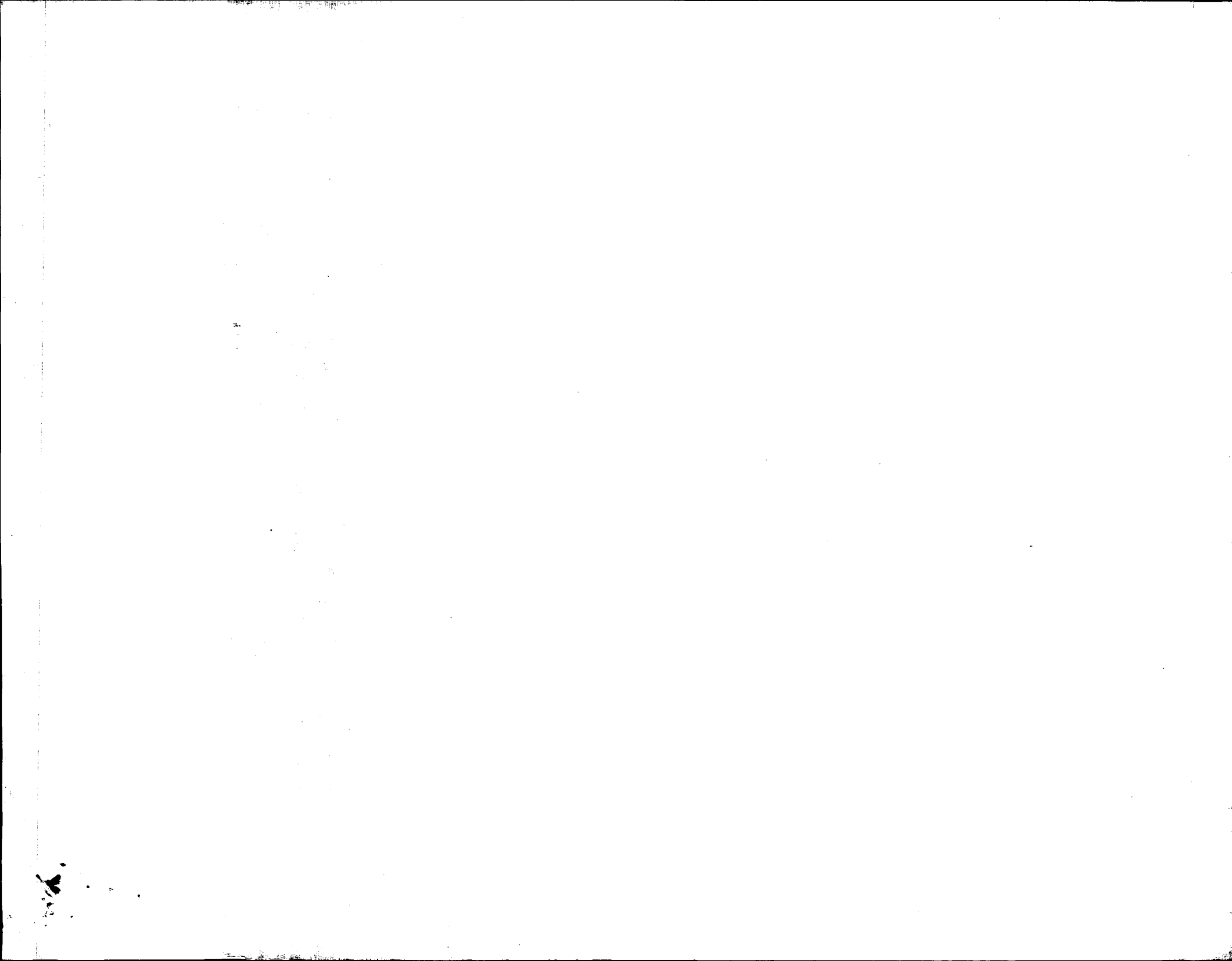
**D2600-7 EXTRUSION**

RELEASED  
11-10-18  
JW

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CHECKED	ASS	DRAWING NO.	REV. E
MFG. APPR.	EL	D2600	SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		EXTRUSION	NTS
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LES MARCHANDISES CI-DESSUS ONT ÉTÉ REÇUES EN BONNE ET DUE FORME  
THE ABOVE GOODS WERE RECEIVED IN GOOD ORDER





325 rue Avro  
Pointe-Claire, QC, Canada H9R 5W3  
Téléphone (514) 697-5120  
Fac-simile (514) 694-8310

sapa:

## Rapport des propriétés mécaniques Mechanical Properties Test Report

Client / Customer : **DART AEROSPACE LTD**  
Adresse / Address : **1270 ABERDEEN STREET  
HAWKESBURY ONT,  
K6A 1K7**

# commande Sapa / Sapa order # : **2091757**

# bon de commande / Purchase order # : **17996**

# de matrice / Die # : **MS 18871**

Description : **D-2600-5 LIGHT DUTY WEB**

Alliage & trempage / Alloy & temper : **6061 T6**

Customer Part #: **D2600-5-080P**

# Contrôle / Control # : **78530-1**

# Coulée / Cast # : **55090**

	Min.requis Min.required	Résultat actuel Actual-results
Tension ultime Ultimate stress (psi)	38 000	44 028
Contrainte élastique Yield stress (psi)	35 000	41 479
% élongation dans 2" % elongation in 2"	8	14
Dureté Rockwell E (hre) Rockwell E Hardness (hre)	88 @ 100	94

Composition chimique typique / Typical chemical composition :

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6063	0,20 - 0,60	0,35 Max	0,10 Max	0,10 Max	0,45 - 0,90	0,10 Max	0,10 Max	0,10 Max
6005	0,60 - 0,90	0,35 Max	0,10 Max	0,10 Max	0,40 - 0,60	0,10 Max	0,10 Max	0,10 Max
6005A	0,68 - 0,72	0,15 - 0,27	0,08 - 0,12	0,20 - 0,24	0,48 - 0,52	0,03 Max	0,05 Max	0,03 Max
6061	0,40 - 0,80	0,70 Max	0,15 - 0,40	0,15 Max	0,80 - 1,20	0,04 - 0,35	0,25 Max	0,15 Max
6351	0,7 - 1,3	0,5 Max	0,10 Max	0,40 - 0,80	0,40 - 0,80	—	0,20 Max	0,20 Max

Nous certifions que le matériel fourni rencontre les exigences chimiques telles qu'annoncées par la norme ASTM B-221-08 excepté pour la section 8.2 (nombre de spécimen) .

We hereby certify that the material supplied meets the chemical properties as published by the ASTM B-221-08 except for section 8.2 (number of specimen) .

Sincèrement vôtre,  
Yours truly,

date : **2012-10-15**



Gilles Pelletier  
Technicien de la qualité  
Quality technician